NORTH CENTRAL FOREST EXPERIMENT STATION

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TIMBER VOLUME IN NORTH DAKOTA COUNTIES, 1980

Thomas L. Castonguay
Associate Mensurationist

ABSTRACT. — The second forest inventory of North Dakota shows growing-stock volume reaching 207 million cubic feet in 1980. Hardwoods make up more than 99 percent of this total.

KEY WORDS: Growing stock, sawtimber, softwoods, hardwoods.

North Dakota's 300,000 acres of commercial forest land supported 207 million cubic feet in growing-stock trees in 1980. Included in the total volume of growing stock are 510 million board feet of saw log material.

Additional volume in live rough, rotten, and short-log trees (nongrowing stock) is 89 million cubic feet.

Hardwoods make up more than 99 percent of the growing-stock volume North Dakota. Quaking aspen accounts for 29 percent of the total. More than 40 percent of the growing stock volume is in the elm-ash-cottonwood[1] forest type (bottomland hardwoods).

North Dakota is divided into East and West inventory units. Eighty-six percent of growing-stock volume is in the eastern unit.

The sampling error of volume for the survey was ± 8.17 percent for 207 million cubic feet of growing stock in the State.

The second forest inventory of North Dakota was conducted in 1978 and 1979 by the North Central Forest Experiment Station with cooperation from the North Dakota Forest Service. Aerial photography was provided by the North Dakota Office of the Agricultural Stabilization and Conservation Service.

[1] *Forests in which elm, ash, or cottonwood, singly or in combination, comprise a plurality of the stocking. Common associates include willow, sycamore, and maple.*

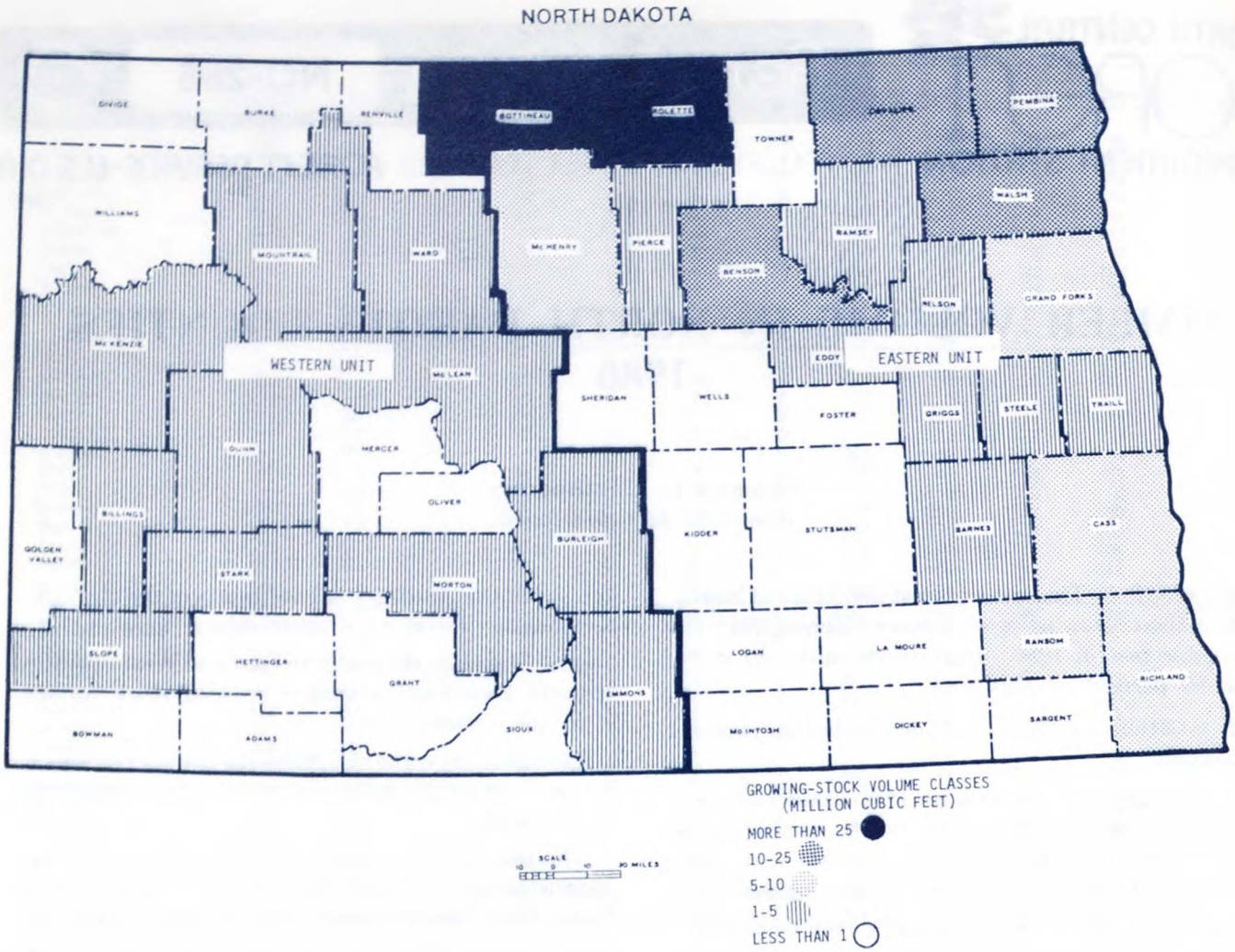

Figure 1. *Growing-stock volume in North Dakota counties, 1980.*

Table 1.--Net volume of growing stock and sawtimber on commercial forest land by county species category and Survey Unit, North Dakota, 1980

EAST UNIT

County	Growing stock[1]						Sawtimber[2]					
	All species	Softwoods	Elm	Ash	Aspen	Other hardwoods	All species	Softwoods	Elm	Ash	Aspen	Other hardwoods
	Thousand cubic feet						Thousand board feet[3]					
Barnes	2,350.5	--	741.2	487.0	61.7	1,060.6	9,300.0	--	3,230.2	1,849.3	88.5	4,132.0
Benson	14,633.4	--	1,522.4	1,371.5	6,898.4	4,841.1	20,536.9	--	7,066.2	3,107.4	2,168.3	8,173.0
Bottineau	26,990.0	--	868.5	2,462.0	15,467.0	8,172.5	31,368.4	--	2,874.9	2,040.3	14,624.7	11,828.5
Cass	5,382.5	--	1,538.2	1,241.2	166.9	2,436.2	20,510.0	--	6,651.2	4,430.1	138.6	9,290.1
Cavalier	23,471.3	--	4,087.0	4,392.5	5,966.3	9,025.5	64,482.2	--	17,262.5	12,875.2	6,041.6	28,302.9
Dickey	442.4	--	134.0	96.1	13.3	199.0	1,715.7	--	577.1	349.4	14.6	774.6
Eddy	2,011.6	--	461.2	440.5	209.9	900.0	6,694.2	--	2,114.2	1,600.8	53.4	2,925.8
Foster	143.4	--	36.7	39.1	5.6	62.0	542.3	--	159.3	135.1	1.4	246.5
Grand Forks	5,768.8	--	1,501.8	1,314.9	373.2	2,578.9	20,623.8	--	6,536.9	4,589.4	156.8	9,340.7
Griggs	1,777.9	--	499.7	432.4	60.9	784.9	6,815.9	--	2,158.7	1,530.9	39.4	3,086.9
Kidder	--	--	--	--	--	--	--	--	--	--	--	--
LaMoure	620.6	--	172.5	153.2	21.6	273.3	2,379.4	--	745.7	540.6	12.8	1,080.3
Logan	49.3	--	16.0	9.4	1.3	22.6	193.3	--	68.8	35.3	2.2	87.0
McHenry	8,601.0	--	2,180.0	1,990.4	315.9	4,114.7	30,769.1	--	9,651.0	7,026.7	155.3	13,936.1
McIntosh	100.4	--	32.7	19.1	2.6	46.0	393.9	--	140.2	71.9	4.4	177.4
Nelson	3,048.8	--	803.2	751.8	81.1	1,412.7	11,478.2	--	3,594.2	2,729.0	48.6	5,106.4
Pembina	13,180.6	--	2,219.1	2,160.7	2,432.1	6,368.7	31,310.8	--	9,682.3	6,345.5	534.6	14,748.4
Pierce	1,152.8	--	315.8	290.2	41.1	505.7	4,402.9	--	1,365.8	1,019.5	21.5	1,996.1
Ramsey	1,362.0	--	230.6	185.2	474.4	471.8	2,995.2	--	1,031.1	562.8	125.1	1,276.2
Ransom	6,958.3	--	1,818.1	1,585.9	366.7	3,187.6	24,917.4	--	7,872.4	5,597.2	139.1	11,308.7
Richland	6,102.1	--	1,594.6	1,546.4	181.1	2,780.0	22,997.1	--	7,085.0	5,538.9	67.3	10,285.9
Rolette	36,895.4	--	940.0	2,718.5	23,635.4	9,601.5	38,985.9	--	3,406.1	1,409.3	21,747.5	12,423.0
Sargent	400.0	--	130.2	76.1	10.4	183.3	1,369.3	--	558.8	286.0	17.6	706.3
Steele	1,332.5	--	413.8	277.4	38.3	603.0	5,187.9	--	1,779.6	1,019.6	48.8	2,339.9
Stutsman	936.8	--	295.0	190.1	26.2	425.5	3,633.3	--	1,267.9	703.3	36.3	1,647.8
Towner	50.1	--	16.3	9.5	1.3	23.0	196.4	--	69.9	33.9	2.2	88.4
Traill	3,366.3	--	1,015.3	736.4	102.4	1,512.2	13,044.8	--	4,371.9	2,873.3	108.6	5,690.8
Walsh	11,072.0	--	2,431.7	2,241.9	1,147.9	5,250.5	34,877.0	--	11,146.5	7,923.7	340.4	15,438.4
Wells	545.5	--	157.3	128.0	18.0	242.2	2,099.0	--	678.5	456.9	14.0	949.6
Unit total	178,746.3	--	26,172.9	27,367.4	58,121.0	67,085.0	414,042.5	--	113,148.9	76,486.3	46,797.6	177,609.7

WEST UNIT

County	Growing stock						Sawtimber					
	All species	Softwoods	Elm	Ash	Aspen	Other hardwoods	All species	Softwoods	Elm	Ash	Aspen	Other hardwoods
	Thousand cubic feet						Thousand board feet[3]					
Adams	13.7	--	--	0.6	0.8	12.3	29.3	--	--	2.0	1.8	25.5
Billings	1,680.9	--	56.9	221.2	73.4	1,329.4	6,145.0	--	235.8	399.0	48.5	5,461.7
Bowman	48.9	--	--	2.3	3.1	43.5	116.5	--	--	7.9	7.2	101.4
Burke	180.4	--	28.3	36.8	5.9	109.4	655.7	--	109.9	65.4	--	480.4
Burleigh	3,630.8	--	258.9	346.6	72.5	2,952.8	15,625.9	--	1,012.1	640.5	46.3	13,927.0
Divide	5.5	--	--	--	--	5.5	--	--	--	--	--	--
Dunn	4,544.0	151.0	139.7	389.5	1,023.1	2,840.7	9,960.3	281.0	645.3	716.0	433.3	7,884.7
Emmons	2,286.9	--	78.7	235.1	34.2	1,938.9	9,889.5	--	312.1	432.1	42.9	9,102.4
Golden Valley	268.8	--	30.6	39.9	9.1	189.2	798.5	--	123.3	74.8	7.2	593.2
Grant	301.8	--	4.0	14.2	19.2	264.4	754.3	--	27.4	49.2	44.8	632.9
Hettinger	27.2	--	--	1.1	1.5	24.6	58.3	--	--	4.0	3.6	50.7
McKenzie	1,801.1	157.5	61.4	587.4	157.4	837.4	4,688.6	293.0	243.2	1,017.8	18.4	3,114.2
McLean	2,628.4	--	269.3	357.1	73.0	1,929.0	10,409.6	--	1,057.7	657.2	42.5	8,652.2
Mercer	715.5	--	85.7	120.3	30.0	479.5	2,445.2	--	332.0	229.1	28.6	1,855.5
Morton	1,199.8	--	114.1	171.3	54.9	859.5	3,825.8	--	442.0	343.7	73.1	2,967.0
Mountrail	2,238.7	--	306.7	407.0	82.8	1,442.2	7,783.5	--	1,202.9	748.5	47.5	5,784.6
Oliver	455.1	--	12.6	30.7	26.9	384.9	1,184.1	--	58.1	85.7	58.2	982.1
Renville	174.6	--	19.5	27.6	7.2	120.3	569.5	--	75.5	53.0	7.3	433.7
Slope	1,487.4	1,385.7	9.6	12.5	2.0	77.6	2,801.0	2,578.5	37.3	22.2	--	163.0
Sheridan	25.6	--	0.8	1.1	1.5	22.2	63.4	--	3.5	3.9	3.6	50.4
Sioux	422.0	--	50.7	67.2	14.9	289.2	1,324.9	--	201.3	125.3	11.0	987.3
Stark	1,239.9	--	137.5	426.2	37.6	638.6	3,911.3	--	544.7	752.3	23.3	2,591.0
Ward	2,637.9	--	172.9	232.0	45.8	2,187.2	11,639.6	--	670.2	424.8	23.4	10,521.2
Williams	353.4	--	47.6	64.1	12.9	228.8	1,216.6	--	184.4	117.7	7.1	907.4
Unit total	28,368.3	1,694.2	1,885.5	3,791.8	1,789.7	19,207.1	95,896.4	3,152.5	7,522.7	6,972.1	979.6	77,269.5
All units	207,114.6	1,694.2	28,058.4	31,159.2	59,910.7	86,292.1	509,938.9	3,152.5	120,671.6	83,458.4	447,777.2	254,879.2

1/The volume of sound wood in the bole of growing-stock trees 5.0 inches d.b.h. and larger, from a 1-foot stump to a minimum of 4.0 inch top diameter outside bark, or to the point where the central stem breaks into limbs. Growing stock volumes are shown in cubic feet.

2/Net volume of the saw log portion of live sawtimber trees (softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches d.b.h. and larger) from stump to a minimum 7 inches top diameter outside bark for softwoods and 9 inches for hardwoods.

3/International 1/4-inch rule.

Table 2.--Net volume of growing stock, sawtimber, short-log, and rough and rotten trees on commercial forest land by individual species, North Dakota, 1980

Species	Total all live	Growing stock[1]	Short log[2]	Rough and rotten[3]	Sawtimber[4]
	Thousand cubic feet				Thousand board feet[5]
SOFTWOODS:					
Ponderosa pine	1,792.3	1,694.2	--	98.1	3,152.5
Total	1,792.3	1,694.2	--	98.1	3,152.5
HARDWOODS:					
Boxelder	18,968.6	5,320.7	2,019.1	11,628.8	9,456.7
River birch	74.9	--	--	74.9	--
Paper birch	7,141.1	6,038.3	335.1	767.7	9,303.7
Hackberry	343.4	178.6	98.0	66.8	621.7
Black ash	932.6	118.8	--	813.8	--
Green ash	46,814.4	31,040.4	1,518.5	14,255.5	83,458.4
Balsam poplar	12,599.7	12,006.8	136.2	456.7	13,510.6
Eastern cottonwood	22,636.1	17,038.5	1,834.8	3,762.8	73,058.2
Plains cottonwood	7,399.1	6,359.4	637.6	402.1	32,729.4
Quaking aspen	76,658.4	59,910.7	489.8	16,257.9	47,777.2
Bur oak	39,935.6	29,229.6	1,749.7	8,956.3	66,082.6
American basswood	11,971.3	10,120.2	406.1	1,445.0	50,116.3
American elm	44,019.9	27,861.3	5,756.1	10,402.5	120,671.6
Slippery elm	197.1	197.1	--	--	--
Noncommercial species	4,618.8	--	--	4,618.8	--
Total	294,311.0	205,420.4	14,981.0	73,909.6	506,786.4
All species	296,103.3	207,114.6	14,981.0	74,007.7	509,938.9

[1]/The volume of sound wood in the bole of growing-stock trees 5.0 inches d.b.h. and larger, from a 1-foot stump to a minimum of 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs. Growing-stock volumes are shown in cubic feet.

[2]/Any live sawtimber size tree of commercial species which has at least one 8-foot log, but less than a 12-foot log that meets minimum log grade specifications.

[3]/Net volume of live trees 5.0 inches d.b.h. and larger that do not contain at least one merchantable 12-foot saw log or two noncontiguous 8-foot or longer saw logs, now or prospectively, because of roughness and poor form or because of rot (that is, when more than 50 percent of the cull volume of the tree is rotten).

[4]/Net volume of the saw log portion of live sawtimber trees (softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches d.b.h. and larger) from stump to a minimum 7 inches top diameter outside bark for softwoods and 9 inches for hardwoods.

[5]/International 1/4-inch rule.

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